

SEQUENCE LISTING

<110> MIYAWAKI, ATSUSHI  
TSUTSUI, HIDEKAZU  
KARASAWA, SATOSHI

<120> FLUORESCENT PROTEIN

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<141> 2005-12-16

<150> PCT/JP04/08790  
<151> 2004-06-16

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<170> PatentIn Ver. 3.3

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Pro Leu Pro Phe Ala Phe Asp Ile Leu Thr Thr Val Phe Asp Tyr Gly  
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Asn Arg Val Phe Val Lys Tyr Pro Glu Glu Ile Val Asp Tyr Phe Lys  
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Gln Ser Phe Pro Glu Gly Tyr Ser Trp Glu Arg Ser Met Ser Tyr Glu  
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Asp Gly Gly Ile Cys Leu Ala Thr Asn Asn Ile Thr Met Lys Lys Asp  
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Gly Ser Asn Cys Phe Val Tyr Glu Ile Arg Phe Asp Gly Val Asn Phe  
115 120 125

Pro Ala Asn Gly Pro Val Met Gln Arg Lys Thr Val Lys Trp Glu Pro  
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Ser Thr Glu Lys Met Tyr Val Arg Asp Gly Val Leu Lys Gly Asp Val  
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Asn Met Ala Leu Leu Leu Gln Gly Gly His Tyr Arg Cys Asp Phe  
165 170 175

Arg Thr Thr Tyr Lys Ala Lys Lys Val Val Gln Leu Pro Asp Tyr His  
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Phe Val Asp His Arg Ile Glu Ile Thr Ser His Asp Lys Asp Tyr Asn  
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Leu Ala Lys  
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Ala Val Asn Gly His Lys Phe Val Ile Thr Gly Lys Gly Ser Gly Gln  
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Pro Phe Gly Ile Gln Asn Met Asp Leu Thr Val Ile Glu Gly Gly  
35 40 45

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gac ggg gga att tgc ctc gcc aca aac aat ata acg atg aag aaa gac 336  
Asp Gly Gly Ile Cys Leu Ala Thr Asn Asn Ile Thr Met Lys Lys Asp  
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ggc agc aac tgt ttt gtc tat gaa att cga ttt gat ggt gtg aac ttt 384  
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aga act act tac aaa gca aag aag gtt gtc cag ttg cca gac tat cac					576
Arg Thr Thr Tyr Lys Ala Lys Lys Val Val Gln Leu Pro Asp Tyr His					
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ttc gtg gat cat cga att gag ata aca agc cat gac aag gat tac aac					624
Phe Val Asp His Arg Ile Glu Ile Thr Ser His Asp Lys Asp Tyr Asn					
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aag gtt aag ctg tat gag cat gct aaa gct cat tcc ggg ctg cca agg					672
Lys Val Lys Leu Tyr Glu His Ala Lys Ala His Ser Gly Leu Pro Arg					
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Pro Phe Glu Gly Ile Gln Asn Met Asp Leu Thr Val Ile Glu Gly Gly
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Pro Leu Pro Phe Ala Phe Asp Ile Leu Thr Thr Val Phe His Tyr Gly
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Asn Arg Val Phe Val Lys Tyr Pro Glu Glu Ile Val Asp Tyr Phe Lys
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Gln Ser Phe Pro Glu Gly Tyr Ser Trp Glu Arg Ser Met Ser Tyr Glu
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Asp Gly Gly Ile Cys Leu Ala Thr Asn Asn Ile Thr Met Lys Lys Asp
  100         105         110

Gly Ser Asn Cys Phe Val Tyr Glu Ile Arg Phe Asp Gly Val Asn Phe
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Pro Ala Asn Gly Pro Val Met Gln Arg Lys Thr Val Lys Trp Glu Pro
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Asn Met Ala Leu Leu Leu Gln Gly Gly His Tyr Arg Cys Asp Phe
  165         170         175

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Arg Thr Thr Tyr Lys Ala Lys Lys Val Val Gln Leu Pro Asp Tyr His  
180 185 190

Phe Val Asp His Arg Ile Glu Ile Thr Ser His Asp Lys Asp Tyr Asn  
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Leu Ala Lys  
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35 40 45

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115 120 125

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130 135 140

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Phe Val Asp His Arg Met Glu Ile Thr Ser His Asp Lys Asp Tyr Asn		
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		80
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Gln Ser Phe Pro Glu Gly Tyr Ser Trp Glu Arg Ser Met Ser Tyr Glu		
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Asp Gly Gly Ile Cys Leu Ala Thr Asn Asn Ile Thr Met Lys Lys Asp		
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Arg Thr Thr Tyr Lys Ala Lys Lys Val Val Gln Leu Pro Asp Tyr His	
180 185 190	
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Phe Val Asp His Arg Met Glu Ile Thr Ser His Asp Lys Asp Tyr Asn	
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aag gtt aag ctg tat gag cat gct aaa gct cat tcc ggg ctg cca agg	672
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100 105 110	
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Ser Thr Glu Lys Met Tyr Val Arg Asp Gly Val Leu Lys Gly Asp Val	
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Arg Thr Thr Tyr Lys Ala Lys Lys Val Val Gln Leu Pro Asp Tyr His  
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Phe Val Asp His Leu Met Glu Ile Thr Ser His Asp Lys Asp Tyr Asn  
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Leu Ala Lys  
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Ser Thr Glu Lys Met Tyr Val Arg Asp Gly Val Leu Lys Gly Asp Val	
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Asn Met Ala Leu Leu Gln Gly Gly His Tyr Arg Cys Asp Phe	
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aga act act tac aaa gca aag aag gtt gtc cag ttg cca gac tat cac	576
Arg Thr Thr Tyr Lys Ala Lys Lys Val Val Gln Leu Pro Asp Tyr His	
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ttc gtg gat cat cta atg gag ata aca agc cat gac aag gat tac aac	624
Phe Val Asp His Leu Met Glu Ile Thr Ser His Asp Lys Asp Tyr Asn	
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aag gtt aag ctg tat gag cat gct aaa gct cat tcc ggg ctg cca agg	672
Lys Val Lys Leu Tyr Glu His Ala Lys Ala His Ser Gly Leu Pro Arg	
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Asn Arg Val Phe Val Glu Tyr Pro Glu Glu Ile Val Asp Tyr Phe Lys	
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Asp Gly Gly Ile Cys Leu Ala Thr Asn Asn Ile Thr Met Lys Lys Asp	
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Gly Ser Asn Cys Phe Val Asn Glu Ile Arg Phe Asp Gly Val Asn Phe	
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Pro Ala Asn Gly Pro Val Met Gln Arg Lys Thr Val Lys Trp Glu Pro	
130 135 140	
Ser Thr Glu Lys Met Tyr Val Arg Asp Gly Val Leu Lys Gly Asp Val	
145 150 155 160	

Asn Met Ala Leu Leu Leu Gln Gly Gly His Tyr Arg Cys Asp Phe  
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Arg Thr Thr Tyr Lys Ala Lys Lys Val Val Gln Leu Pro Asp Tyr His  
180 185 190

Phe Val Asp His Gln Met Glu Ile Thr Ser His Asp Lys Asp Tyr Asn  
195 200 205

Lys Val Lys Leu Tyr Glu His Ala Lys Ala His Ser Gly Leu Pro Arg  
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Leu Ala Lys  
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Asn Arg Val Phe Val Glu Tyr Pro Glu Glu Ile Val Asp Tyr Phe Lys  
65 70 75 80

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85 90 95

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100 105 110

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115 120 125

cct gcc aat ggt cca gtt atg cag agg aag acc gtc aaa tgg gag cca 432  
Pro Ala Asn Gly Pro Val Met Gln Arg Lys Thr Val Lys Trp Glu Pro

130	135	140	
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Ser Thr Glu Lys Met Tyr Val Arg Asp Gly Val Leu Lys Gly Asp Val			
145	150	155	160
aac atg gct ctg ttg ctt caa gga ggt ggc cat tac cga tgt gac ttc			528
Asn Met Ala Leu Leu Gln Gly Gly His Tyr Arg Cys Asp Phe			
165	170	175	
aga act act tac aaa gca aag aag gtt gtc cag ttg cca gac tat cac			576
Arg Thr Thr Tyr Lys Ala Lys Lys Val Val Gln Leu Pro Asp Tyr His			
180	185	190	
ttc gtg gat cat caa atg gag ata aca agc cat gac aag gat tac aac			624
Phe Val Asp His Gln Met Glu Ile Thr Ser His Asp Lys Asp Tyr Asn			
195	200	205	
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Lys Val Lys Leu Tyr Glu His Ala Lys Ala His Ser Gly Leu Pro Arg			
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Leu Ala Lys			
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Pro Phe Glu Gly Ile Gln Asn Met Asp Leu Thr Val Ile Glu Gly Gly			
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Pro Leu Pro Phe Ala Phe Asp Ile Leu Thr Thr Ala Phe Gly His Gly			
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Asn Arg Val Phe Val Lys Tyr Pro Glu Glu Ile Val Asp Tyr Phe Lys			
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Gln Ser Phe Pro Glu Gly Tyr Ser Trp Glu Arg Ser Met Ser Tyr Glu			
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Asp Gly Gly Ile Cys Leu Ala Thr Asn Asn Ile Thr Met Lys Lys Asp			
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Gly Ser Asn Cys Phe Val Tyr Glu Ile Arg Phe Asp Gly Val Asn Phe			
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Pro Ala Asn Gly Pro Val Met Gln Arg Lys Thr Val Lys Trp Glu Pro			
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Ser Thr Glu Lys Met Tyr Val Arg Asp Gly Val Leu Lys Gly Asp Val			

145	150	155	160
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Arg Thr Thr Tyr Lys Ala Lys Lys Val Val Gln Leu Pro Asp Tyr His			
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Phe Val Asp Leu Arg Thr Glu Ile Thr Ser His Asp Lys Asp Tyr Asn			
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Asn	Met	Ala	Leu	Leu	Leu	Gln	Gly	Gly	Gly	His	Tyr	Arg	Cys	Asp	Phe	
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Lys	Val	Lys	Leu	Tyr	Glu	His	Ala	Lys	Ala	His	Ser	Gly	Leu	Pro	Arg	
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Ala Ser Thr Glu Arg Leu Tyr Pro Arg Asp Gly Val Leu Lys Gly Glu  
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Ile His Lys Ala Leu Lys Leu Lys Asp Gly Gly His Tyr Leu Val Glu  
165 170 175

Phe Lys Ser Ile Tyr Met Ala Lys Lys Pro Val Gln Leu Pro Gly Tyr  
180 185 190

Tyr Tyr Val Asp Ser Lys Leu Asp Ile Thr Ser His Asn Glu Asp Tyr  
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Pro Leu Pro Phe Ala Tyr Asp Ile Leu Thr Thr Ala Phe His Tyr Gly  
50 55 60

Asn Arg Val Phe Ala Lys Tyr Pro Asp His Ile Pro Asp Tyr Phe Lys  
65 70 75 80

Gln Ser Phe Pro Lys Gly Phe Ser Trp Glu Arg Ser Leu Met Phe Glu  
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Asp Gly Gly Val Cys Ile Ala Thr Asn Asp Ile Thr Leu Lys Gly Asp  
100 105 110

Thr Phe Phe Asn Lys Val Arg Phe Asp Gly Val Asn Phe Pro Pro Asn  
115 120 125

Gly Pro Val Met Gln Lys Lys Thr Leu Lys Trp Glu Ala Ser Thr Glu  
130 135 140

Lys Met Tyr Leu Arg Asp Gly Val Leu Thr Gly Asp Ile Thr Met Ala  
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Leu Leu Leu Lys Gly Asp Val His Tyr Arg Cys Asp Phe Arg Thr Thr  
165 170 175

Tyr Lys Ser Arg Gln Glu Gly Val Lys Leu Pro Gly Tyr His Phe Val  
180 185 190

Asp His Cys Ile Ser Ile Leu Arg His Asp Lys Asp Tyr Asn Glu Val  
195 200 205

Lys Leu Tyr Glu His Ala Val Ala His Ser Gly Leu Pro Asp Asn Val  
210 215 220

Lys  
225